Proposal Reviews

#239: Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks

US Geological Survey

Initial Selection Panel Review	
Research and Restoration Technical Panel Review	
Delta Regional Review	
External Scientific Review	#1 #2 #3
Prior Performance/Next Phase Funding	
Environmental Compliance	
Budget	

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP
Initial Selection Panel Review

Proposal Number: 239

Applicant Organization: US Geological Survey

Proposal Title: Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks

Please provide an overall evaluation rating.

Explanation of Recommendation Categories: Fund

- **As Is** (a proposal recommended for funding as proposed)
- **In Part** (a proposal for which partial funding is recommended for selected project phases or components)
- **With Conditions** (a proposal for which funds are recommended if the applicant contractually agrees to meet the specified conditions)

Consider as Directed Action in Annual Workplan (a proposal addressing a high priority action that requires some revision followed by additional review prior to being recommended for funding)
Not Recommended (a proposal not currently recommended for funding-after revision may be considered in the future)

Note on "Amount":

For proposals recommended as Fund As Is, Fund In Part or Fund With Conditions, the dollar amount is the amount recommended by the Selection Panel.

For proposals recommended as Consider as Directed Action in Annual Workplan, the dollar amount is the amount requested by the applicant(s).

Fund	
As Is	**-**
In Part	**X**
With Conditions	**-**
Consider as Directed Action	**-**
Not Recommended	**-**

Amount: **$767134**

Conditions, if any, of approval (if there are no conditions, please put "None"):

Provide half the project funds.

Provide a brief explanation of your rating:

This project seeks to build on increasing understanding of the drinking water quality implications of discharges (from ag returns and wetland environments) into the Delta containing certain types of dissolved organic carbon (DOC). It develops and tests, under controlled conditions, the applications of chemicals that cause the dissolved substances to flocculate and then settle from the water column. The settled sediments accumulate and contribute to subsidence mitigation. The proposal received 2 excellent grades and 1 good grade from external reviewers and a medium rating from the Delta panel. The concerns of the reviewers include the immediate need for the approach, the magnitude of the likely contribution of the flocculant to sediment accretion, and some wishes that this be coordinated with studies of Hg.

The Selection Panel determined that this proposal stands alone whether or not the sediments make an important contribution to subsidence mitigation (this issue appears to be the risk that the technical panel noted). The Panels recommendation is to fund in part, providing half the costs ($767,134 is 50% of the requested funds) based on expected cost-sharing from the Drinking Water Quality Program.

Research and Restoration Technical Panel Review:

CALFED Bay-Delta 2002 ERP PSP
Research and Restoration Technical Panel Review Form

Proposal Number: 239

Applicant Organization: US Geological Survey

Proposal Title: Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks

Review:

Please provide an overall evaluation summary rating:

Superior: outstanding in all respects;
Above Average: Quality proposal, medium or high regional value, and no significant administrative concerns;
Adequate: No serious deficiencies, no significant regional impediments, and no significant administrative concerns;
Not Recommended: Serious deficiencies, significant regional impediments or significant administrative concerns.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	**The proposal presents an innovative approach to tackling several environmental problems at once: DBPs, wetland subsidence and flooding risk. The researchers are highly qualified, the scale of the research (lab experiments followed by field testing in mesocosms) is appropriate for the state of knowledge. Although the potential payoffs from this research are large, it is risky.**
XAbove average	
-Adequate	
-Not recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

   The goals are clearly stated and a conceptual model is presented that is based on results of on-going research. If successful, the project would provide an innovative approach to dealing with several environmental problems.

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

The project is testing a novel idea that has considerable promise but no guarantee of success; the project will provide a clear answer as to whether this idea will work, so in that sense the project has a high likelihood of success. Because of the way the project has been designed (lab assessments followed by field trials in mesocosms), it appears feasible. The proposal would have been stronger had they provided some estimates of sedimentation rates that would be expected. Coordination with other researchers working on contaminants such as mercury would have strengthened the proposal. The panel expressed some concern that wetlands are often a source of DOC; it is not clear why these settling basin wetlands would not also be DOC source. The investigators are highly qualified to do the research and appropriate performance measures are proposed.

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

   The proposed research will evaluate the effectiveness of an innovative and promising technique. If that technique is shown to be effective, it is likely to make a significant contribution to ecosystem restoration.

4. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   There is a sizable USGS cost-share, which increases the amount of work that can be done for this CALFED expenditure. The budget is adequate for the work proposed, although it is unclear how much is being requested under the drinking water program and to what extent the feasibility of this project depends upon that project being funded.

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

   One region ranked it as medium. Although the linkage to clean water policy improvements and to some existing restoration projects was recognized, the region did not see an immediate need for the project. It will be several years before a process like this would be able to be used at a larger scale; hence the absence of an immediate need was not viewed as detrimental by the panel.

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

   Slight concern was raised about prior performance. The latest report received on a current project is March 2001. Environmental permits need to be listed on the Environmental Checklist even if DWR is handling them. No time has been budgeted for acquiring permits. Project appears feasible if permits can be obtained. Cost share has been included in the budget; need to verify that CALFED is being asked for $1,534,269.

Miscellaneous comments:

None

Delta Regional Review:

Proposal Number: 239

Proposal Title: Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks

Overall Ranking: **-**Low **X**Medium **-**High

Provide a brief summary explanation of the committee's ranking:

The regional panel favors environmental water quality projects that provide the information most likely to be helpful in making decisions about clean water policy and action in the Delta. The proposed study ties into a few restoration areas but may not be intensely needed at this time.

1. Is the project feasible based on local constraints?

   XYes **-**No

   How?

   Much of the study is done in existing wetland test plots on Twitchell Island. DWR has agreed to the use of the test plots for this purpose.

   Information could be useful for peat acreation and DOC reduction.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

   XYes **-**No

   How?

   MR-2 (Develop programs for wildlife friendly agriculture), DR-3 (Restore upland wildlife habitat + support wildlife friendly agriculture), and DR-6 (Restore Delta's shallow water habitats while minimizing contaminants' effects). The study investigates wetland contribution to DOC concentrations in the Delta and how flocculation/sedimentation could reduce DOC discharge. Proponents are active in CALFED and IEP conferences.

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

   XYes **-**No

   How?

   Other DOC studies, Peat accretion studies, levee stability.

This type of information will be useful in determining how to restore habitat in certain areas of the Delta that have subsided or are close to drinking water intakes.

4. Does the project adequately involve local people and institutions?

   XYes **-**No

   How?

   Involves both RD 1601 and DWR.

Other Comments:

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: **239**

Applicant Organization: **US Geological Survey**

Proposal Title: **Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
XExcellent	**This is a timely proposal with potentially high returns for management. It addresses two current issues high on the CALFED list of identified problems in the Bay-Delta area land subsidence and contaminant transport (actually generation). It would be great if some of the Hg cycling investigators could partner with this group. As a large demonstration project, the more concurrent research, the better.**
-Good	
-Poor	

1. **<u>Goals.</u>** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

   This is a well thought out proposal with clear goals, objectives and hypotheses. This issue is both timely and important in this call for proposals. It addresses tow separate problems for the Bay-Delta region, subsidence of land in the basin and the problem with by-products of the disinfectant process for drinking water treatment. Instead of merely assessing the problems, this proposal presents an experimental treatment design. As such it is well-founded and perhaps the most directly pertinent proposal that I have reviewed.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

   This study is definitely justified and the proposal itself shows that the PIs have been working in this area for a long time and have progressed in their research to a point that they have developed mitigative approaches for current and emerging problems. This is both a research and a demonstration project. The steps in demonstration are balanced with a thorough lab and mesocosm approach.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

   This approach is well-reasoned and it can certainly be seen that the development of the various aspects of this study were the result of detailed preliminary research. It is interesting to see that surrogate measures are used instead of standard techniques for DOC analyses. That shows that the PIs have learned to economize of time, spending and interpretation.

   The approach is a stepwise progression of lab, mesocosm and implementation. It is too bad that there are not any graduate students involved in the current regime. There are many side projects that the PIs could easily undertake to address specific questions in toxicity and bioaccumulation. This project would also be important to align with Hg studies to assess the effects on this bioaccumulative metal. The loss of HMW DOC will have a direct effect on Hg partitioning and speciation. Perhaps it may make the Hg more bioavailable for methylation. Metal speciation based on changing ligands would make a nice addition.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

   This project is certainly worth trying. It is probably technically feasible, but at such a large scale, one would almost have to try it and then determine cost effectiveness for future implementation. Just the laboratory work and mesocosm experiments alone would be worthwhile with a high likelihood of success. The project design is consistent with the objectives presented.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

   This is the best description of any proposal with respect to performance measures and should be held as a model for others. Performance measures are integrated with specific tasks of the project and it is clear to see how success will be evaluated. It is refereshing to see that performance measures can be more than a list of anticipated peer-reviewed journal articles.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

The value of this project lies in the ability to produce information necessary to manage water resources. It is well known that DOC from terrestrial sources are precursors of disinfectant by-products from the water treatment process. In addition to providing information on management options for widescale decreases in DOC, the process will allow for an interruption on subsidence properties. The PIs may even suggest pretreatment wetland for water systems with high capacity treatment of high DOC waters.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   These PIs are well-qualified to perform the tasks involved in this study. They have shown that they can develop a well-reasoned study with a high likelihood of success. The infrastructure is in place to make it work.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   While somewhat expensive, there is substantial cost-sharing from USGS with this proposal. Such a large-scale demonstration project is expensive and the cost are warranted.

Miscellaneous comments:

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: **239**

Applicant Organization: **US Geological Survey**

Proposal Title: **Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
XExcellent	**I strongly support the integration of environmental restoration and water quality improvement through such a potentially practical, effective, and low cost and low risk appraoch. The experiments are well-planned with a nested approach from jar tests to experimental wetland manipulations. The researchers have excellent records in this area.**
-Good	
-Poor	

1. **<u>Goals.</u>** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

   The researchers propose to conduct field and laboratory studies that will evaluate the effectiveness of LICD (low intensity chemical dosing) for the dual goals of 1) lowering the dissolved organic carbon concentrations in source water for drinking water and thereby decreasing the exposure of the population to DBP's and 2) alleviating the degradation of wetlands by subsidence and enhancing the stability of the levees. It is the second goal that falls specifically under the research to be supported in the ERP. The proposed research builds on the inherent linkages between land management and water quality to devise practical approaches to enhance both environmental values and public health. These goals

are clearly stated and are consistently presented throughout the proposal. This holistic approach is definitely a strength of the proposed study, and is especially timely because the research could lead to practical and low cost measures that could be inititiated in a few years.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

   The research is well-supported as a continuation of on-going research that has been successful in other areas. The idea being evaluated in this study is elegant and straightforward. Instead of creating a metal-oxide floc to remove DOC in the water treatment plant, and thus generating a sludge that requires disposal, create the floc in-situ in a wetland, generating a solid phase that will help to rebuild the wetland. A very clear diagram illustrating the conceptual appraoch is included in the proposal. The solid phase generated in situ will have suitable chemical properties because it is composed of iron and/or aluminum oxides and natural organic material. This material therefore may pose fewer problems compared to amending a wetland with dredged material that may contain some contaminants. The researchers argue that this approach could be easily implemented by farmers and the type of material used as a coagulant optimized for particular conditions. Because the materials used to alleviate subsidence are naturally abundant in the environment, the risk of unanticipated chemical contamination is minimal. The experimental approach involves both further laboratory batch studies and mesocosm studies conducted in a constructed wetland on Twitchell Island. The field study is well-justified. The field study will provide the essential knowledge to evaluate the effectiveness, costs and feasibility of this approach at full scale application.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

   The appraoch is based upon linking land use and water quality objectives and on establishing conditions of effective operation through field and laboratory testing and experimentation. Thus, the research is highly likely to succeed and lead to a beneficial strategy for enhancing the wetlands in the Bay area to support wildlife.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

   The proposed project is well-planned and definitely feasible on the schedule identified.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

   The monitoring plans are clearly described and should be more than satisfactory to determine the effectiveness of the LICD approach. The performance measures realte to both the DOC reduction and the restoration of the wetland, and seem to be clearly established.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

The products from this project will be more detailed protocols for implementing an LICD approach for restoring wetland habitat and reducing DBP problems in the Delta waters.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   The researchers involved in the study have extensive experience in studying biogeochemical processes in constructed wetlands and in the chemistry and management of DBP's. The laboratory facilities appear to be well equipped to support the proposed measurements.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   There is a considerable amount of cost share involved in the proposal and the budget itself is adequate for the planned studies.

Miscellaneous comments:

External Scientific: #3

Research and Restoration External Scientific Review Form

Proposal Number: **239**

Applicant Organization: **US Geological Survey**

Proposal Title: **Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
-Excellent	**The project is investigating a promising method, but it is not clear whether sedimentation rates would be enough to create viable wetlands, reduce export of disinfection byproduct precursors, or reduce the impacts of subsidence.**
XGood	
-Poor	

1. **<u>Goals.</u>** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

   The goals are clearly stated and of interest. If successful, this method would improve drinking water quality, wetland formation and counteract subsidence; hence it would provide benefits for multiple CALFED goals.

2. **<u>Justification.</u>** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

The model underlying the proposed research is clearly articulated, although existing knowledge could have been more effectively employed to calculate likely sedimentation rates. This project is definitely speculative so the scale of the proposed research (lab experiments followed by field mesocosms) is appropriate.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

   The approach is a refinement and novel application of existing coagulation techniques. It is a very interesting and potentially useful idea that could address several problems at once. Although the investigators will evaulate possible metal contamination with this approach, there may also be considerable pesticide contamination of the coagulated DOC. This should at least be evaluated in a subset of samples.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

   I would have liked to see a back-of-the-envelope calculation on DOC concentrations, possible coagulation rates, and hence rates of sedimentation that could be expected with this project. I have no idea whether the sedimentation rates that are likely to be achieved would even make a difference in counteracting subsidence. There is a possibility that the approach will not work at all, given that wetlands commonly export more DOC than enters them (as noted on p. 6 of proposal). Hence this is really a speculative proposal. If the method works, it could be very useful. But it may not work.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

   Performance measures are outlined in Table 1, and seem appropriate.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

   If it works, it will produce a product of value. It is not at all certain that the project will work as planned.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   The applicants clearly have the technical skills and the study site appropriate for doing this research. It is unclear what the subsidence mitigation wetland demonstration project is; that should have been more clearly explained because this project will be using their setup and facilities and it is unclear how the two projects relate. It is also unclear which investigator is responsible for which component of the project.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   There is a sizable USGS match, which increases the amount of work that can be accomplished with a CALFED investment. This project also meshes with proposed research on improving drinking water quality with these coagulation methods.

Miscellaneous comments:

Prior Performance/Next Phase Funding:

New Proposal Number: 239

New Proposal Title: Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks

1. Prior CALFED project numbers, titles, and programs: (*list only projects for which you are the contract manager*)

   99-A01 Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail & Other Native Species.

   00-G01 Dissolved Organic Carbon Release from Wetlands - Part 2

2. Prior CVPIA project numbers, titles, and programs: (*list only projects for which you are the contract manager*)

   none

3. Have negotiations about contracts or contact amendments with this applicant proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?

   XYes **-**No **-**N/A

   If no, please explain any difficulties:

   x

4. Are the status, progress, and accomplishments of the applicant's current CALFED or CVPIA project(s) accurately stated?

   XYes **-**No **-**N/A

   If no, please explain any inaccuracies:

   Could be better for 00-G01, most recent status update in CALFED file is dated March 2001.

5. Is the applicant's progress towards these project(s)' milestones and outcomes to date satisfactory?

   XYes **-**No **-**N/A

   If no, please explain deficiencies:

   x

6. Is the applicant's reporting, records keeping, and financial management of these projects satisfactory?

XYes **-**No **-**N/A

If no, please explain deficiencies:

x

7. Will the project(s) be ready for next phase funding in 2002, based on its current progress and expenditure rates?

-Yes **-**No **X**N/A

If no, please explain:

x

Other Comments:

none

Environmental Compliance:

Proposal Number: 239

Applicant Organization: US Geological Survey

Proposal Title: Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks

1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

   -Yes **X**No

   If no, please explain:

   Project proponent states that permitting will be handled by DWR. Likely permits (grading permits, discharge permits, others) should still be indicated on the environmental checklist and in the comments section.

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

   -Yes **X**No

   If no, please explain:

   No budget detail for permitting, or if CEQA documents are required.

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

   -Yes **X**No

   If yes, please explain:

   If project proponents obtain all necessary permits, this project is feasible.

Other Comments:

Budget:

Proposal Number: 239

Applicant Organization: US Geological Survey

Proposal Title: Investigating in situ Low Intensity Chemical Dosing to decrease Delta waters DOC concentrations and DBP Precursors while accelerating wetland peat accretion rates and reducing flood risks

1. Does the proposal include a detailed budget for each year of requested support?

   XYes **-**No

   If no, please explain:

2. Does the proposal include a detailed budget for each task identified?

   XYes **-**No

   If no, please explain:

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

   XYes **-**No

   If no, please explain:

4. Are appropriate project management costs clearly identified?

   XYes **-**No

   If no, please explain:

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

   -Yes **X**No

   If no, please explain (for example, are costs to be reimbursed by cost share funds included in the budget summary).

   Applicant's cost share of $460K included in total budget request. Verify that proposal request to CALFED is only $1,534,269.

6. Does the budget justification adequately explain major expenses?

   XYes **-**No

If no, please explain:

7. Are there other budget issues that warrant consideration?

   -Yes **X**No

   If yes, please explain:

Other Comments: